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93-232466/29 A17 E11 F06 L02 (A35 **SHOW 91.12.04**
SHOWA DENKO KK *JP 05156054-A
91.12.04 91JP-320720 *(93.06.22)* C08J 7/04, D01F 6/30, D06M 10/08, 13/513 (D06M 101:18)

Surface modifying method with silane cpd. for polyolefin - involves introducing reactive functional gp. on polyolefin surface by corona discharge treatment and forming silane cpd. film, useful for reinforcing materials

C93-103540

The surface modification of a polyolefin is carried out by:
(a) introducing reactive functional gp. partially on the surface of polyolefin by irradiation, treatment, or corona discharge treatment; and
(b) forming a film consisting of the silane cpd. of formula (I) opt. in a solvent.

$$R^1{}_nSi\ (OR^2)_{(4-n)} \qquad (I)$$

n = 0-2;
R^1 = gp. selected from 1-6C hydrocarbon gp. or 1-6C organic gp. with substituent, e.g. amino, mercapto, epoxy, methacryloxy, alkoxy and/or halogen;

A(4-G1D, 8-M1D, 10-E10, 10-E22A, 12-R1A) E(5-E, 5-E2C, 5-E2D, 5-E3) F(1-D5, 1-H6B, 3-D) L(2-D5)

R^2 = 1-6C hydrocarbon gp. 1-6C acyl or hydrogen.

USES/ADVANTAGES

The silane coated polyolefin can be used for cement reinforcing material, because thin and uniform silane coating film with good adhesive property can be formed on the surface of the polyolefin.

EMBODIMENTS

(b) Silane cpd. coating film is formed using the vapour of silane cpd. of formula (I).
Solvent (b) has smaller surface tension than critical surface tension of polyolefin with functional gp. on the surface.
(a) Introduction of reactive functional gp. is carried out by exposing the surface of polyolefin to oxygen contg. gas after electron beam irradiation.(7ppW57RBHDwgNo0/0).